REMARKS

Claims 9, 11, 14, 20 and 22 have been amended to further recite the invention without the intention of narrowing the scope of any of the claims. Further, new claims 23-32 have been added to further recite the invention. Claims 1-32 are pending in the present application. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Claims 3 and 14 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant respectfully traverses these rejections for the following reasons.

Contrary to the Office Action's conclusion, claim 3 does provide proper antecedent basis for the limitation "the second radiation source element" in line 3 of claim 3, which recites "a second radiation source element." Also, claim 14 has been amended to provide proper antecedent basis for the limitation "illumination system." Therefore, Applicant respectfully submits that claims 3 and 14 are not indefinite as written and the rejections of claims 3 and 14 under § 112, second paragraph should be withdrawn.

Claims 1-3 and 12-14 were rejected under 35 U.S.C. § 102(b) in view of United States Patent No. 5,850,279 to Nara et al. ("Nara"). Applicant respectfully traverses these rejections for the following reasons.

The cited portions of Nara disclose an alignment apparatus (item 30 in FIG. 2) for a lithographic apparatus (10), having a light source (32) that supplies a light beam having a first radiation wavelength characteristic and a light beam having a second wavelength characteristic. *See* col. 2, line 65 – col. 3, line 3 and col. 8, lines 22-27 of Nara. While the light beam having the first wavelength characteristic may be used for exposure, the light beam having the second wavelength characteristic is only used for alignment, i.e., the substrate is not photosensitive to that light beam and thus that light beam is not used for exposure. *See* col. 3, lines 1-3 of Nara. For example, once alignment is completed in Nara, "[t]he light source 32 is turned OFF, and an exposure light source in the illumination system 18 is turned ON to start full-plate scanning exposure." Col. 11, lines 53-56 of Nara.

Accordingly, Applicant submits that the cited portions of Nara do not disclose, teach, or suggest a lithographic apparatus comprising, *inter alia*, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide

radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate as recited by independent claim 1. Furthermore, Applicant submits that the cited portions of Nara do not disclose, teach, or suggest a device manufacturing method comprising, *inter alia*, providing radiation at a first wavelength range and at a second wavelength range, the second wavelength range being different from the first wavelength range and projecting the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of a substrate as recited by independent claim 12.

As discussed above, Nara merely discloses a conventional arrangement of a light beam of a first wavelength characteristic used for exposure and a light beam of a second wavelength characteristic that is not used for exposure, i.e., the substrate is not photosensitive to the light beam of the second wavelength characteristic and that light beam is used merely for alignment. In contrast, for example, claim 1 recites a radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project that radiation as patterned onto a target portion of the substrate, the patterned radiation used for exposing resist on the target portion. *See e.g.*, paragraphs [0002] and [0019] of Applicant's specification. Thus, Applicant claims a lithographic apparatus and a device manufacturing method capable of exposing a target portion of a substrate using radiation in a first wavelength range and using radiation in a second different wavelength range (although clearly not necessarily simultaneously).

Therefore, Applicant respectfully submits that independent claims 1 and 12 are believed to be allowable. Claims 2, 3, 13, and 14 depend respectively from claims 1 and 12 and are, therefore, patentable for at least the same reasons provided above related to claims 1 and 12 respectively, and for the additional features recited therein. Thus, Applicant respectfully requests that the rejection of claims 1-3 and 12-14 under §102(b) in view of Nara should be withdrawn and the claims be allowed.

Claims 4, 9, 11, 15-20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nara in view of United States Patent No. 6,137,574 to Hill ("Hill"). Applicant respectfully traverses these rejections for the following reasons.

The cited portions of Nara fail to disclose, teach, or suggest independent claims 1 and 12 as discussed above.

Further, the cited portions of Hill do not overcome the shortcomings of Nara. None of the cited portions of Hill disclose the claimed elements of independent claims 1 and 12. For example, the cited portions of Hill fail to provide any disclosure, teaching or suggestion regarding a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate as recited by independent claim 1. Similarly, the cited portions of Hill fail to provide any disclosure, teaching or suggestion regarding providing radiation at a first wavelength range and at a second wavelength range, the second wavelength range being different from the first wavelength range and projecting the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of a substrate as recited by independent claim 12.

As previously argued, the light source 1 of Hill does not correspond to the radiation source of claim 1. The light beam 7 emitted from the light source 1 of Hill is not patterned by a patterning device, as recited in claim 1. The light beam 9 from the modulator 3 of Hill is also not patterned by a patterning device. Claim 1 also recites a projection system is configured to project the patterned radiation onto a substrate. The light beam 7 from the light source 1 and the light beam 9 from the modulator 9 of Hill are not patterned, nor are they projected onto a substrate.

Therefore, Applicant respectfully submits that a *prima facie* case of obviousness has not established and that Nara, Hill, nor the proper combination thereof, disclose, teach or suggest each and every element recited by independent claims 1 and 12. Claims 4, 9, 11, 15-20 and 22 depend respectively from claims 1 and 12 and are, therefore, patentable for at least the same reasons provided above related to claims 1 and 12, and for the additional features recited therein.

Thus, Applicant respectfully requests that the rejections of claim 4, 9, 11, 15-20 and 22 under § 103(a) over Nara in view of Hill should be withdrawn and the claims be allowed.

Claims 10 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nara in view of United States Patent Application Publication No. 2002/0065796 to Stryer et al. ("Stryer"). Applicant respectfully traverses these rejections for the following reasons.

The cited portions of Nara fail to disclose, teach, or suggest independent claims 1 and 12 as discussed above.

Further, the cited portions of Stryer do not overcome the shortcomings of Nara. None of the cited portions of Stryer disclose the claimed elements of independent claims 1 and 12. For example, the cited portions of Stryer fail to provide any disclosure, teaching or suggestion regarding a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate as recited by independent claim 1. Similarly, the cited portions of Stryer fail to provide any disclosure, teaching or suggestion regarding providing radiation at a first wavelength range and at a second wavelength range, the second wavelength range being different from the first wavelength range and projecting the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of a substrate as recited by independent claim 12.

For example, the cited portions of Stryer fail to provide any disclosure of a lithographic apparatus having radiation source configured to provide radiation in a first wavelength range and in a second different wavelength range and using that radiation to expose a substrate.

Therefore, Applicant respectfully submits that a *prima facie* case of obviousness has not established and that Nara, Stryer, nor the proper combination thereof, disclose, teach or suggest each and every claim element of independent claims 1 and 12. Claims 10 and 21 depend respectively from claims 1 and 12 and are, therefore, patentable for at least the same reasons provided above related to claims 1 and 12 respectively, and for the additional features recited therein.

Thus, Applicant respectfully requests that the rejections of claim 10 and 21 under § 103(a) in view of Nara in view of Stryer should be withdrawn and the claims be allowed.

Claim 1 was rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable in view of claims 1, 5 and 6 of United States Patent No. 6,924,885 ("the '885 patent"). Applicant respectfully traverses this rejection for the following reasons.

Applicant submits that claims 1, 5, and 6 of the '885 patent fail to disclose, teach or suggest each and every element of claim 1 of the present application, for example, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate. Claim 6 of the '885 patent, to the contrary, recites the radiation source is substantially monochromatic at a first wavelength. If this obviousness-type double patenting rejection is maintained, Applicant requests a detailed explanation how each and every element is claimed in the '885 patent.

Therefore, Applicant respectfully submits that obviousness-type double patenting in view of the '885 patent has not been established and that claim 1 is believed to be allowable. Thus, Applicant respectfully requests that the rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting in view of the '885 patent be withdrawn and the claim be allowed.

Claim 1 was provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable in view of claim 1 of United States Patent Application Serial No. 10/792,909 ("the '909 application"), which published as United States Patent Application Publication No. 2005/0110965. Applicant respectfully traverses this rejection for the following reasons.

Applicant submits that claim 1 of the '909 application fails to disclose, teach or suggest each and every element of claim 1 of the present application, for example, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate. Claim 1 of the '909 application merely discloses a radiation source for an alignment system. If the obviousness-

type double patenting rejection is maintained, Applicant requests a more detailed explanation of how each and every claim element is also claimed in the '909 application.

Therefore, Applicant respectfully submits that provisional obviousness-type double patenting view of the '909 application has not been established and that claim 1 is believed to be allowable. Thus, Applicant respectfully requests that the rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting in view of the '909 application be withdrawn and the claim be allowed.

Claims 1 and 2 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable in view of claim 1 of United States Patent Application Serial No. 10/925,214 (the '214 application), which published as United States Patent Application Publication No. 2005/0078292. Applicant respectfully traverses these rejections for the following reasons.

Without acceding to the merits of the rejection, Applicant makes note of MPEP § 804(B)(1), which provides that if a provisional obviousness double-patenting rejection is the only rejection remaining in the earlier filed of the two pending applications, then the obviousness double-patenting rejection in the earlier filed application should be withdrawn thereby permitting that application to issue without need of a terminal disclaimer. Applicant submits the '214 application was filed after the present application and thus requests the treatment provided by MPEP § 804(B)(1).

Thus, Applicant respectfully requests that the provisional rejection of claims 1-2 under the judicially created doctrine of obviousness-type double patenting in view of the '214 application be withdrawn and the claims be allowed.

Claim 1 was provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable in view of claim 18 of United States Patent Application Serial No. 11/242,146 ("the '146 application"), which published as United States Patent Application Publication No. 2006/0072108). Applicant respectfully traverses this rejection for the following reasons.

Applicant submits that claim 18 of the '146 application fails to disclose, teach or suggest each and every element of claim 1 of the present application, for example, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range,

the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate. Claim 18 simply has no disclosure, teaching or suggestion regarding a radiation source configured to provide radiation in a first wavelength range and in a second wavelength range. If the this obviousness-type double patenting rejection is maintained, Applicant requests a detailed explanation how each and every element is claimed in the '146 application.

Therefore, Applicant respectfully submits obviousness-type double patenting in view of the '146 application has not been established and that claim 1 is believed to be allowable. Thus, Applicant respectfully requests that the provisional rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting in view of the '146 application be withdrawn and the claim be allowed.

Claim 1 was provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable in view of claim 9 of United States Patent Application Serial No. 10/957,752 ("the '752 application"), which published as United States Patent Application Publication No. 2006/0072107. Applicant respectfully traverses this rejection for the following reasons.

Applicant submits that claim 9 of the '752 application fails to disclose, teach or suggest each and every element of claim 1 of the present application, for example, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range and a projection system configured to project the patterned radiation [in the first wavelength range and/or the second wavelength range] onto a target portion of the substrate. Claim 18 simply has no disclosure, teaching or suggestion regarding a radiation source configured to provide radiation in a first wavelength range and in a second wavelength range. If the obviousness-type double patenting rejection is maintained, Applicant requests a detailed explanation how each and every element is claimed in the '752 application.

Therefore, Applicant respectfully submits that obviousness-type double patenting has not been established and that claim 1 is believed to be allowable. Thus, Applicant respectfully requests that the provisional rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting be withdrawn and the claim be allowed.

New claims 23-32 have been added to further recite the invention. Claims 23 and 28 include subject matter that is similar to that recited in original claims 4 and 15 respectively. Applicant respectfully submits that claim 23 is patentable over the relied upon references at least because those references fail to disclose, teach or suggest a lithographic apparatus, comprising, *inter alia*, a radiation source configured to provide radiation to an illumination system, the radiation source configured to provide radiation in a first wavelength range and in a second wavelength range, the second wavelength range being different from the first wavelength range, wherein the lithographic apparatus is configured so that the first wavelength range is used in a controlled ambient environment in the lithographic apparatus, and the second wavelength range is used when the controlled ambient environment is not established as recited in claim 23.

For example, Nara is simply silent about the ambient environment through which any of its beams pass. Further, Hill and Nara are silent about having a first wavelength range used in a controlled ambient environment in the lithographic apparatus, and a second wavelength range used when the controlled ambient environment is not established. In Nara and Hill, the different wavelengths are simply used in whatever prevailing environment is provided and are not distinguished for a controlled ambient environment and for when a controlled ambient environment is not established.

To the extent that the Office Action asserts with respect to claims 4 and 15 that these claimed aspects are well known is a taking of official notice, it is respectfully submitted that the analysis required by MPEP § 2144.03 has not been performed. In addition, Applicant respectfully requests documentary evidence that such aspects are well known. Further, to the extent the Office Action asserts with respect to claims 4 and 15 that these claimed aspects are inherent from the applied references, it is respectfully submitted that the Office Action has not provided any basis in fact and/or technical reasoning, as required by MPEP § 2112, for such a conclusion. It is also respectfully submitted that such aspects are not inherent. For example, it is not disclosed, taught, suggested or necessary in Hill or Nara that a first wavelength range is used in a controlled ambient environment in the lithographic apparatus, and a second wavelength range is used when the controlled ambient environment is not established. Rather, Nara and Hill make no distinction between such circumstances, at least in part because neither Nara nor Hill recognizes such a distinction. Accordingly, such claimed aspects are not inherent to the applied references.

Claims 24-27 depend from claim 23 and are, therefore, patentable for at least the same reasons provided above related to claim 23, and for the additional features recited therein.

For similar reasons as discussed above regarding claim 23, Applicant submits that claim 28 is patentable over the cited references. Claims 29-32 depend from claim 28 and are, therefore, patentable for at least the same reasons provided above related to claim 28, and for the additional features recited therein.

All rejections have been addressed. It is respectfully submitted that the present application is in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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